

What is claimed is:

1. A viscosity modifier for lubricating oil comprising an ethylene/ α -olefin copolymer (B) composed of:

- 5 (i) ethylene,
(ii) an α -olefin of 3 or more carbon atoms, and
(iii) a higher α -olefin of 4 to 20 carbon atoms wherein the carbon number of (iii) is larger than that of (ii) by one or more, and

10 the ethylene/ α -olefin copolymer (B) has the following properties (b-1) and (b-2):

(b-1) a content of ethylene (i) is in the range of 40 to 80 % by weight, a content of the α -olefin of 3 or more carbon atoms (ii) is in the range of 15 to 59 % by weight, and a content
15 of the higher α -olefin of 4 to 20 carbon atoms (iii) is in the range of 0.1 to 25 % by weight with the proviso that the sum is 100 % by weight; and

(b-2) a weight-average molecular weight (Mw) in terms of polystyrene as measured by GPC is between 80,000 and 400,000.

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2. The viscosity modifier for lubricating oil as claimed in claim 1, wherein the ethylene/ α -olefin copolymer (B) has the property (b-3):

(b-3) a ratio of Mw/Mn (Mn: number-average molecular
25 weight) is 2.4 or less.

3. The viscosity modifier for lubricating oil as claimed in claim 1 or 2, wherein the ethylene/ α -olefin copolymer (B) has the property (b-4):

5 (b-4) a melting point (T_m) as measured by DSC is 60°C or lower.

4. The viscosity modifier for lubricating oil as claimed in any one of claims 1 to 3, wherein the α -olefin of
10 3 or more carbon atoms (ii) is propylene.

5. The viscosity modifier for lubricating oil as claimed in any one of claims 1 to 4, wherein the carbon number of the higher α -olefin (iii) is in the range of 6 to 20.

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6. The viscosity modifier for lubricating oil as claimed in any one of claims 1 to 5, wherein the ethylene/ α -olefin copolymer (B) contains (i) ethylene in an amount of 60 to 80 % by weight, (ii) an α -olefin of 3 or more
20 carbon atoms in an amount of 18 to 34 % by weight, and (iii) a higher α -olefin of 4 to 20 carbon atoms in an amount of 0.5 to 20 % by weight.

7. A lubricating oil composition comprising:
25 (A) a lubricating oil base, and

(B) an ethylene/ α -olefin copolymer in an amount of 1 to 30 % by weight, which copolymer is comprising:

(i) ethylene,

(ii) an α -olefin of 3 or more carbon atoms, and

5 (iii) a higher α -olefin of 4 to 20 carbon atoms wherein the carbon number of (iii) is larger than that of (ii) by one or more, and

the ethylene/ α -olefin copolymer (B) has the following properties (b-1) and (b-2):

10 (b-1) a content of ethylene (i) is in the range of 40 to 80 % by weight, a content of the α -olefin of 3 or more carbon atoms (ii) is in the range of 15 to 59 % by weight, and a content of the higher α -olefin of 4 to 20 carbon atoms (iii) is in the range of 0.1 to 25 % by weight with the proviso that the sum
15 is 100 % by weight; and

(b-2) a weight-average molecular weight (Mw) in terms of polystyrene as measured by GPC is between 80,000 and 400,000.

8. A lubricating oil composition comprising:

20 (A) a lubricating oil base,

(B) an ethylene/ α -olefin copolymer in an amount of 0.1 to 5 % by weight, which copolymer is comprising:

(i) ethylene,

(ii) an α -olefin of 3 or more carbon atoms, and

25 (iii) a higher α -olefin of 4 to 20 carbon atoms wherein

the carbon number of (iii) is larger than that of (ii) by one or more, and

(C) a pour-point depressant in an amount of 0.05 to 5 % by weight;

5 wherein the ethylene/ α -olefin copolymer (B) has the following properties (b-1) and (b-2):

10 (b-1) a content of ethylene (i) is in the range of 40 to 80 % by weight, a content of the α -olefin of 3 or more carbon atoms (ii) is in the range of 15 to 59 % by weight, and a content of the higher α -olefin of 4 to 20 carbon atoms (iii) is in the range of 0.1 to 25 % by weight with the proviso that the sum is 100 % by weight; and

15 (b-2) a weight-average molecular weight (Mw) in terms of polystyrene as measured by GPC is between 80,000 and 400,000.

9. The lubricating oil composition as claimed in claim 7 or 8, wherein the ethylene/ α -olefin copolymer (B) has the property (b-3):

20 (b-3) a ratio of Mw/Mn (Mn: number-average molecular weight) is 2.4 or less.

10. The lubricating oil composition as claimed in any one of claims 7 to 9, wherein the ethylene/ α -olefin copolymer (B) has the property (b-4):

25 (b-4) a melting point (Tm) as measured by DSC is 60°C or

lower.

11. The lubricating oil composition as claimed in any one of claims 7 to 10, wherein the α -olefin of 3 or more carbon atoms (ii) is propylene.

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12. The lubricating oil composition as claimed in any one of claims 7 to 11, wherein the higher α -olefin (iii) has 6 to 20 carbon atoms.

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13. The lubricating oil composition as claimed in any one of claims 7 to 12, wherein the ethylene/ α -olefin copolymer (B) contains (i) ethylene in an amount of 60 to 80 % by weight, (ii) an α -olefin of 3 or more carbon atoms in an amount of 18 to 34 % by weight, and (iii) a higher α -olefin of 4 to 20 carbon atoms in an amount of 0.5 to 20 % by weight.

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